Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME 5.] NEW YORK OCTOBER 13, 1849. [NUMBER 4.

THE
Scientific American,
THE
BEST MECHANICAL PAPER IN THE WORLD.
CIRCULATION 12,000.
PUBLISHED WEEKLY.
At 128 Fulton Street, New York, (Sun Building,) and 13 Court Street, Boston, Mass.
BY MUNN & COMPANY.
The Principal Office being at New York.
Barlow & Payne, Agents, 89 Chancery Lane, London.

TERMS--$2 a year--$1 in advance, and the remainder in 6 months.

Rail Road News

Honor and English Railroads.

The scoundrelism and swindling that has been carried on by large stockholders in the British railways, surpass in villany the acts of the Buccaneers. Hudson should be sent to Pandemonium as soon as possible, and so should all those who were leagued with him in his disreputable speculations. It is well known that hundreds of the best class of the British working people, servants and mechanics, who, by economy and dint of industry had laid up a few pounds against sickness and old age, were induced three years ago, by the alluring prospect of adding to their small gains, to invest their little fortune in railway stocks. At the right moment—known well to Hudson and his base companions, the price of shares fell, and thousands upon tens of thousands of the invested earnings of these honest simple working people, were swept into the coffers of the most profligate of all classes, viz., the monied speculators. At the present moment we see that a determination exists among the British people, to probe all the affairs of the different railway companies to the very bottom. We hope that the awards of punishment will be ample. The best way to do justice to Hudson, would be to condemn him to be rode upon a rail for 21 years, the punishment to be inflicted on a chesnut one full of slivers, and managed by a committee of his victims.

The Hudson River Railroad.

The arrangements made by the Hudson River Railroad Co., for the accommodation of their cars at Thirty-first street, are very complete and extensive. In the first place they have erected a long brick building of sufficient width to admit three cars at once; then, a short distance off, on the west side of the road near the curve, where the track enters Tenth avenue, is a large round constellated looking engine house, containing the appropriate apparatus for turning the locomotives, &c. Most of the cars themselves are elegant looking articles, furnished and finished, inside and out, in the latest and most improved style. Even in the second class cars, more attention than usual is bestowed upon the 'Emigrants.' This company are laying down rails to come into the heart of our city.

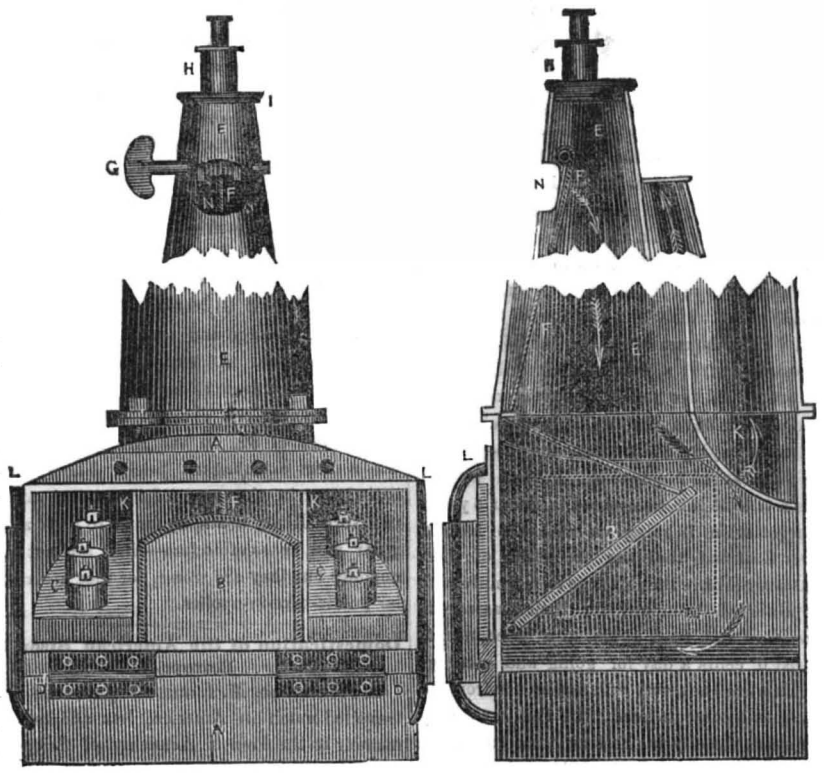
The travel on our Western Railroads is very great at present. The receipts on the New York and Erie Road for last month, were $77,000. The Railroad connecting the beautiful village of Elmira, with the Genessee Lake will be finished this month.

The Hudson River Railroad is now carrying about nine hundred passengers per day.

Though years bring with them wisdom, yet there is one lesson the aged seldom learn, viz the management of youthful feelings. Age is all head, youth all heart; age acts under the influence of disappointment, youth under the dominion of hope.

DAY'S SUB-MARINE TELESCOPIC EXAMINER.

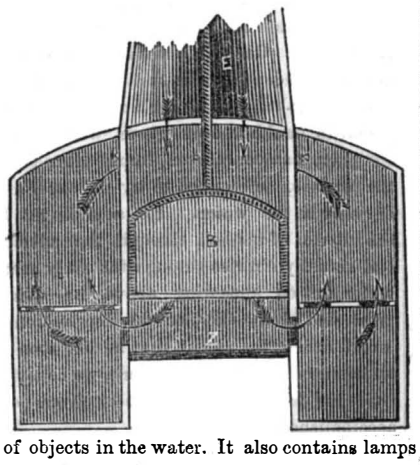
Figure 1. Figure 2.



This is an instrument for examining the hulls of vessels that may spring a leak at sea, and for examining the bottom of rivers and seas.

Fig. 1 is a front elevation, showing the tube in sections as it may be made of any length. Fig. 2 is a transverse vertical section of fig. 1, and fig. 3, is an interior section, showing the way the lamps are supplied with air and how the smoke escapes. The same letters refer to like parts, on all the figures. A A is a metal box containing the lamps and the mirror; E E is the main tube, which may be made of any length by sections, coupled firmly together. The box, A, is made perfectly tight, with a glass door in front to keep out the water, and it contains a mirror to receive the impression

Fig. 3.



of objects in the water. It also contains lamps to throw a brilliant light around the apparatus in any depth of water, and it therefore can be used in the darkest night as well as in the clearest daylight. B is the mirror; it is fixed on a joint at its lower end in front, and to a cord, F, at the top. This cord passes up through the main tube around a screw key or *pirn*, G, above, so that the mirror can be raised to a vertical position, or be retained at any angle in 90 degrees, as represented in fig. 2. K K are the lamp chambers, and C the lamps. The lamp chambers are divided completely from the mirror chamber by partitions, but the air to the lamp passes down the main tube behind the mirror, by a small passage, as indicated by the arrows, then down under the mirror chamber and through side rectangular slits below the lamps, as seen in fig. 3. The smoke escapes up through a small tube soldered to the main tube, as indicated by the arrows. There is a glass light, Z, on the floor of the mirror chamber, so that objects may be seen on the bottom, when the mirror is vertical. The sides, front plate, and back, make a recess below this light. so that when the instrument is pushed down into the water, a portion of air is confined between the water and glass, and this keeps it (the glass) always clean. L L are side flanges, to receive a slide to protect the glass door in front of the mirror and lamps, when the instrument is not used. H, at the top, is a spy glass, that may be used sometimes in combination with the main tube. When it is used, the opening through which the screw key is seen, supplies the lamps with air. The lamps throw light freelyout through the glass door in front, and objects in the water are reflecting on the mirror, B, which represents those objects to the examiner, who is looking through the tube. This instrument may be hung over a ship's bulwarks, and her whole bottom examined from deck. (We know of the difficulties in the rigging, &c., to do this.) An instrument of fifty feet in length will not weigh more than 50 lbs.

Mr. Willard Day, of Brooklyn, is the inventor, and a patent for it will soon be issued. It is now being exhibited by Mr. Day, at the Fair of the American Institute, and it attracts a great deal of attention.

Campbell's Monument in Westminster Abbey

The admirers of Campbell, the author of the Pennsylvania Cottage, have raised a little upwards of £400 to erect a monument to his memory in Westminster Abbey, but the plan has been seriously embarrassed by the extortionate demands of the Dean and Chapter, a company of clergymen who have sinecure stations connected with this cathedral church.—These greeds demand a fee of £210 for permission to occupy 12 square feet of wall with a statue of the author of "The Pleasures of Hope;" and what remains is not sufficient to procure the work. The same unconscionable hierarchy demand £150 for permission to place a bas-relief medallion of Cowper.

Useful Receipts.

Preparations of the Purple Powder of Cassius.

Dissolve 300 grains of gold in five times their weight of aqua regia, prepared from four parts of hydrochloric acid, and one part of nitric acid; evaporate the solution almost to dryness; this evaporation is requisite to get rid of the acid. The chloride of gold being redissolved in water, and filtered, the solution is to be diluted till it measures 26 ounces. Fragments of granulated tin are then to be put into it, which becomes turbid and brown in a few minutes; its tint gradually becomes deeper, and, at the end of a quarter of an hour, it assumes a fine purple colour; the precipitate is deposited, and it remains only to collect it on a filter.

It sometimes happens, and especially when large quanties are operated on, that the precipitate does not separate, but remains in the liquid, to which it gives a deep purple colour; in this case, it is merely requisite to heat the liquid slightly, and to add a little common salt, the product then immediately separates.

When the liquid holding the purple powder in suspension is decanted, to separate the excess of metallic tin which remains at the bottom of the metallic vessel, in the state of a black powder, are poured off with it; it is proper to allow the liquor to settle for some time, and afterwards to decant it. This operation should be repeated three or four times.

To Take a Speck from the Eye.

We lately learned a very clever and safe mode of extracting any little speck of dirt or dust from the eyes, when it cannot be easily removed by the hand. It consists in licking it out with the tongue. The person affected lays his head down with his face uppermost, and the operator, desiring that the eye shall be kept open, comes across it gently with his tongue so as effectually to wipe it clear of the extraneous body. This we find, has been a common practice among some classes of stone-cutters, on getting what is called a fire in the eye and we doubt if the whole of the resources of the medical art could afford a better remedy.

[The above is from one of our contemporaries, it reminds us that we have had the operation a number of times performed upon ourselves and we must commend it, but there are few who like to perform it.]

Freaks of a French Chemist.

M. Boutigny, the author of the experiment of making ice in a red-hot crucible, divides or cuts with his hand a jet of melted metal, or plunges his hand into a pot filled with incandescent metal. No precautions are necessary to preserve it from the disorganizing action of the incandescent; only have no fear, especially if the skin be humid, and pass the hand rapidly, but not too rapidly, through the metal in full fusion. There is no contact between the hand and the metal; the hand becomes insulated; the humidity which covers it passes into the spheroidal state, reflects the radiating caloric, and does not become heated enough to boil. M. Boutigny has often repeated the apparently dangerous experiment in lead, bronze, etc., and always with success.

The most inquisitive are generally the most loquacious; and where an individual takes great pains to make himself acquainted with our circumstances, we should suspect his motive, especially if he is lavish in his promises of secrecy.

The flavor of tea can only be preserved, by keeping it secluded from the air.

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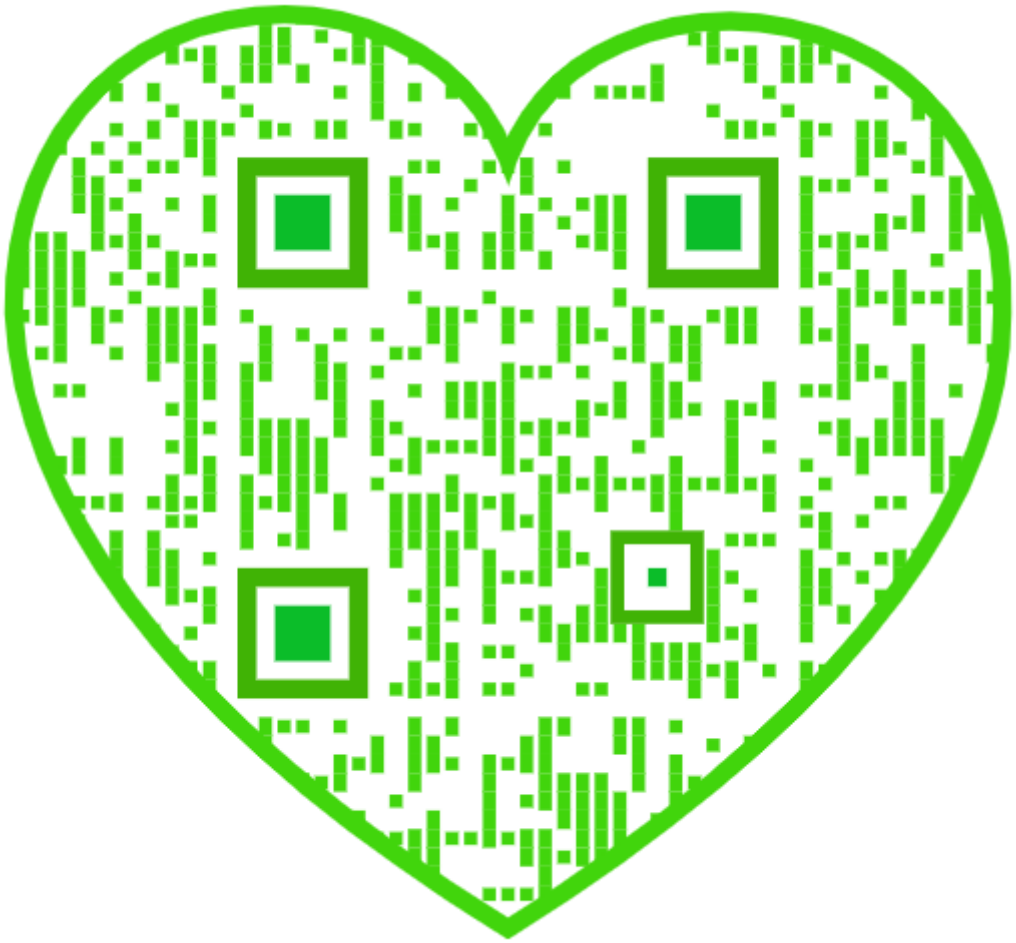

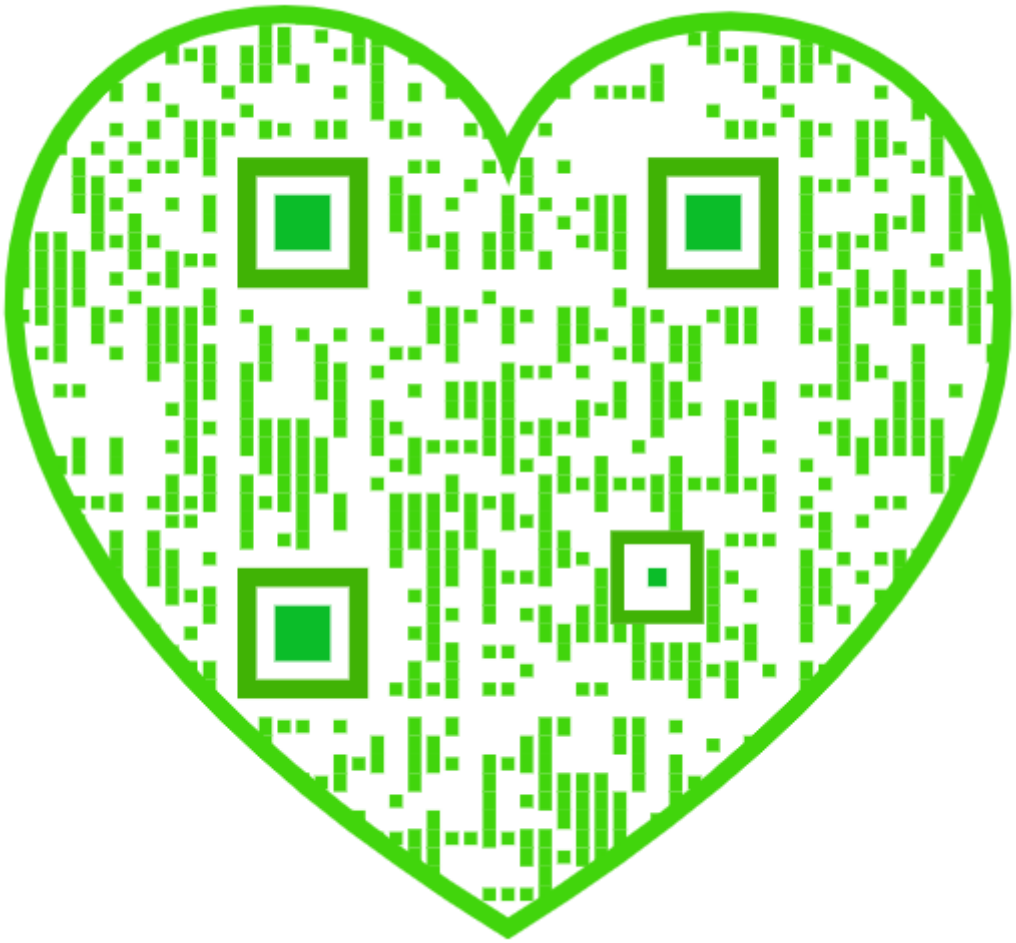

Miscellaneous.

American Butter.

The Genesee Farmer, speaking of American butter in England, says that by foreign accounts, it is not so well packed or made as the Irish or the Dutch, and a great quantity of it has to be sold for grease, as being unfit to use. We believe the evil of this does not so much lie in the packing as in the way of collecting the cream. To make good butter the milk should never be *turned* when the cream is taken off. Let care be exercised in this respect, and then we will always have sweet butter from sweet cream. Or let the milk be churned without skimming—the way in which the best butter is produced. It would be well to pack the butter firkins inside of larger firkins, filled between with salt.

Marriage in High Life.

The New York Herald says that Mrs. Fanny Kemble Butler is about to be married to Theodore Sedgwick, Esq. The Lowell Advertiser thinks this will be news to Mr. Sedgwick's family. For our part we do not think Mr. S. has any idea of having two wives on hand; it is probable that the Herald was short of fashionable intelligence about that time. The Newport and Saratoga balls having ceased on account of the unfashionable season, a marriage in high life must of course be expected.

Singular Story a Lost Child Found.

Three years ago on the 8th day of October, a young boy four years of age named Jas. Douglas Burt son of John Burt, of Albany N.Y., was lost, and notwithstanding the most diligent search was made for him, the only clue obtained to his whereabouts was, that he was enticed off by a woman, while looking through the canvass of a circus tent. Lately, Mr. Burt's attention was attracted to a paragraph in a newspaper, stating that a little boy, 6 or 7 years of age, had been picked up in Syracuse while endeavoring to find shelter from the rain in a dry goods box. He was recognised by flesh marks and restored to his parents. During his whole absence he had been kept by the woman by whom he had been enticed away, and who is the wife of a man of property owned in Oswego. The latter professes to know nothing of the way in which the boy was obtained. The women had taught him that he was an orphan, and had come from England. During the State Fair at Syracuse he stole away from his abducter to see the sights at the fair, where he had managed to live by earning pennies for holding horses, &c., until he was picked up as above narrated.

Every person will enquire "what were the motives which led to the abduction and retention of this boy." We cannotsatisfiy ourselves. Some of our readers will doubt the truth of the story altogether, but we assure them, that it is true, for we know the little fellow well, and a bright boy he was, and is yet.

Useful Information to Shipmasters.

Accounts from Malta by the overland mail, report that the Terible, steam-frigate, sent to take sounding on the shoal, had returned, after finding the water much shallower than it is marked on the charts, and another shoal of much greater extent had been discovered, not marked at all, which leads to a strong presumption that some volcanic action is in progress. For the more minutely examining the new shoal, the Rosamond, steam sloop, of less draught of water, was despatched from Malta on the 22d. and had not, up to the 24th, yet returned. Sir William Barker, the Commander-in-Chief in the Mediterranean, had also despatched from Malta several of the launches of the ships in port, accompanied by the Oberon and Spitfire steam-sloops, to seek for (by means of dragging) a hidden rock, which though said to have been seen by several Maltese seamen, during the past forty years, is still classed among the doubtful dangers, and upon which, it is supposed, the Earl of Aukland, steamer, struck in March last, situated from 87 to 95 miles due east of Malta.

This expedition is a very important one to shipmasters.

The Doubtful Rock near Malta.—Later News.

As has been reported that there was a rock in the Mediterranean, not laid down in the charts, and on which more than one vessel was wrecked, and had been the supposed cause of injury to the British screw steamer, the Earl of Aukland. The surveying expedition sent out to discover the truth or fallacy of the reports, under the command of Sir James Sterling, after a full survey for several successive days, and during the prevalence of calm weather, run up the parallels in which it has been reported to exist, and carefully swept and dragged for it without success. No soundings were to be met with under 300 fathoms, and we think we may now pretty confidently affirm that no such rock exists.

Cheap Houses for Mechanics and Artisans.

It is reported that a movement is on foot in this city, by several large capitalists, such as Mr. Grinnell, Mr. Minturn, and others, to buy a large tract of land some fifteen miles from the city of New York, to erect a new city upon. Two millions of dollars to be the capital. The company are to build 5,000 brick houses at $500 each, including the lot of 50 by 200 feet. These houses are to let at $52 each to mechanics, or $1 a week, which will pay 10 per cent. All the houses to be uniform. Each occupant to have the right to purchase his house, by paying $2 a week, and keeping up the interest of 7 per cent. In this way he gets a title to his homestead in about 6 years. A negotiation is going on with the Hudson River Railroad, that the occupants of these houses shall have the privilege to commute with the Railroad Company for their passage to New York and back again, at a price not to exceed 6 cents a day for going and coming; the distance each way will not be far from 15 miles, at 3 cents a head. In this way they can reach the city in half an hour, but could not in any way come down into the city, in less time than one hour. The price for railway transit would be $20 per annum, at any rate, making the rent equal to $70. We hope that the houses are intended to be self-contained. The great difficulty is in the distance of 15 miles from the city. Working people must be at their labor on the mark at 7 A. M. Above all other classes, they should he able to live near to the places of their labors.

The Pearlash Springs at the Great Salt Lake.

Many people think that these wonderful springs do not exist; but they are there, and no mistake. Thousands of California emigrants, who stopped to rest at the Salt Lake, watered their cattle at the springs, and would pay no attention to the warnings of the Mormons not to let their cattle drink of the water so strongly impregnated with saleratus. They said it was all a "Mormon humbug" about the alkali being strong enough to kill their cattle, and the consequences were, that more than two thousand dead carcases of oxen now lie strewed along the way, and the very offensive smell caused thereby renders it almost impossible to travel near the road. The Mormons are making money by selling their produce to emigrants and buying things brought to them. By-and-by they intend starting an establishment to make pot and pearlashes, from the water of these springs, which they think will be far more valuable than all the gold mines about there.

Female Model Lodging House in London.

The Society for Improving the Condition of the Laboring classes have just opened a model lodging house in Hatton Garden, for unmarried females of good character. The premises are done up in a style of comfort which is surprising, considering the moderate charge,—2s. 4d. a week. payable in advance,—for which the accomodation is provided. There is accommodation for about sixty females, each having a separate bed in a separate compartment, and light, fire, washing and the use of culinary utensils; everything, in short, which could be had in a private house, except their food, which each inmate provides for herself. There is also a general sitting-room, and a library containing various instructive volumes, all characterized by their moral tendency.

Knavery.

The competition among the steamboats plying on the North River, has caused such a reduction of fare, that it is not unusual to see placards posted about New York City announcing that passengers will be carried to Albany for the trifling sum of one shilling; but care is taken not to state that fifty cents is required for a berth, and an additional fifty cents for a meal. This is all very well, as far as it goes, but it seems there is a way of imposing upon travellers which amounts to a downright swindle. If tickets for passage are bought on shore, or before the boat starts, they are disposed of at the published price; but if that necessary operation is postponed until the steamer is fairly on its way, a far higher demand is made and remonstrances are met with the cool remark that the low price was an old advertisement that should have been discontinued. Recently, on board the steamer Alida, a lady was, in this way, charged two dollars fare, when it should have been only twenty-five cents. This is downright knavery.

[The above is from the United States Gazette, and we believe every word of it. It is our opinion that $1,50 would never be too much for a passage and berth to Albany, but the public would not support a boat at that rate of fare, unless it is regular, if another and an inferior one charged fifty cents less. The charge of $2, on the Alida, a day boat, was a most extravagant price. There is but little honor in the way of managing any of the North River boats, so far as to have a regular and reasonable fare—they are not monopolies but they are worse, for they are regular public-take-in-opolies.

Domestication of the American Bison in Europe.

A Frenchman, M. Lamore Piquot, who has travelled much in America, has addressed a memoir to the French Academy of Sciences, in which he strongly urges the naturalization and domestication of the American Bison in France, on the ground that it would be excellent for use in agricultural pursuits for draught, and would furnish a new meat of an agreeable flavor. He states that the animal has been domesticated on the Red River, and the flesh found excellent after it has been five years in that state. He cites an instance in 1842, in which the animal at four years of age performed a journey of seventy-five miles in a day; and, on the morrow, dragged back, by eleven at night, a load of eight hundred pounds. The memoir was referred to these eminent naturalists of the Academy.

Singular Cause of Death.

A melancholy incident occured in the course of the late San Pedro Expedition to recover treasure from a sunken ship on the South American coast. One of the divers, by a singular act of imprudence, unfortunately lost his life. The diving-bell was on the bottom, and the signal to haul had been given, when one of the party named Jackson, impatient to get to the surface, determined to try the experiment of rising in the water. He accordingly left the interior of the bell, through the aperture, and actually did rise through the sixty feet of water, but on appearing above, he was so prostrated by the effort of the deprivation of breath during the ascent, that he died soon after taken on board. Ten fathoms, we believe, is twice the depth the most expert divers ever accomplished.

"Slow Rises Worth by Poverty Depressed."

"It is commonly reported," states the Sheffield Times, "that in the picturesque custom, which still survives, of carrying milk to Sheffield market, England, in small barrels slung across a donkey's back, Francis Chantry, the eminent sculptor, bore his part; and that, in the days of his childhood, he often sat betwixt the shaking barrels on the road between his native village, Norton, and our town. The lad thus humbly employed found little sympathy or assistance when the light of higher purposes was dawning within him."

Men should labor zealously for the community, strenuously for their friends, and sufficiently for themselves.

Leather Preservative.

We have received from Messrs. A. Bacon & Co., of Charlton, Worcester Co., Mass., a box of Water-proof Blacking—a very valuable composition for preserving leather. We can assure our friends that this article is not inferior to any now in use, (and there are many.) The manufacturers are practical tanners, and understand well what is necessary to render leather impervious to water without impairing its strength, a very important desideratum. This article is not new, but has stood the test of several years trial. Each box contains one half pint of Preservative, and is sold at twenty cents per box.

Francis W. Rice, the Junior Editor of the Boston Olive Branch, announces his withdrawal from that paper, with which he has been connected for the past five years. It is Mr. Rice's intention to proceed to San Francisco, where he will be engaged in conducting an administration journal. We had a slight acquaintance with him, and feel assured that wherever he may go, a host of warm friends will gather around him. We wish him abundant success in his new enterprize.

American Produce in London.

A vessel lately arrived at London from this country with a cargo of pigs' feet. It is easy to see where these feet came from, Cincinnati. A great quantity of American butter has also been received, and American Silver Lake ice, from Boston, hoes out all the Norway produce of this nature. The United States could feed all Europe; she has coal enough to heat all Europe, and then she can also cool them off by her ice. What can she not do, after giving Uncle John the dearest cup of tea that he ever tasted.

Gold Seeker.

New York, Oct. 4, 1849.

Messrs. Editors:—Will you permit me through the medium of your valuable paper to lay before the public, (especially Californians and other adventurers) an improved method for the more speedy and successful operations in their researches after the precious metal, by means of galvanic influence; it is more especially useful in rivers, and other places in their nature inaccessible, except attended with much time, labor and expense. The plan is simply this, to allow two wires from each pole of a voltaic battery to drag at the bottom of the river; when they come in contact with any metalic substance, the voltaic circuit is complete, and the electricity acts immediately on the Galvanometer, which shows by its deflection that some metal must be at the bottom; by this means no great labor is requisite, except in places where an ample return must be expected to repay the workmen. This method would, I have no doubt, be used with much success in various parts of the Sacramento River, where gold is supposed to exist in large quantities, and would save the unnecessary expense of cutting canals, draws, &c., for the drainage of the river, where perhaps no gold ever existed.

The machine is both cheap and portable, and a knowledge of its use can be easily acquired with a little study, by any man of ordinary intellect. A machine something after the above plan has been used with much success in Russia for exploring the numerous streams of the Ural Mountains. L. H. Mick, C. E..

No. 2. Jay street, corner of Hudson.

[We do not see how this machine could operate correctly, as water itself is a good conductor, and will complete the galvanic circuit without any metallic connection between the negative and positive poles.—Ed.

A True and Wonderful Snake Story.

We learn from the Berks & Schuylkill Journal, Pa., that a snake with two heads (we are sorry that we cannot put the ten tails to it,) was killed recently near the Poplar Neck Bridge, by the Toll-keeper, Mr. John Jackson. It measured nearly one foot in length, with two perfect heads growing out of a single body, forming altogether a most rare curiosity. The snake is preserved in a flask of spirits, and may be examined by all who are curious in such matters by calling on Mr. Jackson.

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Ærial Navigation.

Messrs. Editors :—In the second number of the present volume of your journal you have an article under the head of "The Difficulty of Navigating the Air." In this you correctly assume that a body must be 800 times lighter than water before it can float in the air, and that such a body, therefore, must carry 800 times less power than a steamboat. You then go on and state that a steamboat cannot make any headway against a wind blowing two hundred miles per hour. Granted. The part of the boat above the water is opposed by the wind—the part below, or in the water, is against the opposing *current* of water, caused by the wind, which is much more opposing than the wind would be of itself, if blowing against the hull of the boat directly. In the case of the water, acted on by the wind, it is an *accumulating* force, increased by the duration of the blast and extent of its impact upon the water. But it is even so as you have stated; you then say, "how is it possible for a body of 800 times less power to make any headway against even a gentle wind blowing three miles an hour." And from the whole calculation you make in the aforesaid article, you conclude that Ærial Navigation "Is no go."

Your paper is intended to promote the arts and sciences, and your opinion on any subject, being its editor, carries with it weight, and should therefore be open to a fair analysis. Now, *if* your premises in the question were firm and invariable, the conclusions could hardly be shaken. Your hurricane would indeed blow all ærial machinery, its own way, with a velocity *exactly* equal to its own, (I have experienced this,) and it would moreover wreck and founder any ship or steamboat caught in its track. The air craft has but one medium, the water craft has two; hence the latter's destruction, arising from the great disparity of density in the two mediums, and the former's safety from moving in the simple element. Such a wind, so far from injuring a balloon, would only drive it completely round the world in five days. But the ærial ship has an advantage, compared with the water ship, that is seldom considered. It can surmount, or *dodge* the "no go" barrier in your premises,—the steamboat can't. It is not necessary, in ærial navigation, to go right against the wind, nature is very profuse, in its variety of atmospherical currents, within two miles above the level of the sea. The greatest obstacle to the perfection of ærial navigation, is, in the loss of buoyant power required in rising and falling into the currents that will waft the vessel towards its port of destination. I am not theorising when I say that nature is profuse in its variety of currents; I know it from the experience of over a hundred ærial excursions. By the aid of these contrary and various currents I have avoided the otherwise necessity of descending in rivers, forests, lakes, seas and bays. The uppermost current I have always found to blow from West to East. While aloft, I have, within the *visible* length of a twine string suspended from the car, seen the effects of two currents, besides the one that moved the balloon. These strings were five hundred feet long. You may often see, as you no doubt have seen, two, three, and four different currents of air within the range of the cloud region, when clouds exist. I have found these various currents just as numerous in a perfectly clear atmosphere. The greatest desideratum, in ærial navigation, is, a power adaptable to raising and lowering the balloon, without expending any of its buoyant gas. Steam, I think, is not adaptable to its being made a *common* useful art. It would do for a demonstrable purpose. But the progress of improvement may yet give us a power adaptable to this art, if we should fail to contrive a means by which the balloon may be made to rise and fall by the principle of expansion and contraction. Franklin said the child must learn to walk before it can run, in allusion to æronautics; and as this child laid in the womb of science over two thousand years before it was born, (it was sought after, all that time, by many ingenious persons) it is certainly doing very well, considering its infant state. A subject like this, calculated, when perfected, to bring within the space of a few weeks the practicability of exploring the whole circumference of the globe, must have its time,—that time is fast approaching—but it wants encouragement, especially by the developing powers—the Scientific Press.

The natural elements, so far from presenting barriers and obstacles, as they do to a great extent in ocean navigation, seem to be peculiarly inviting to ærial navigation. The almost universal opinion, and to a great extent among really scientific men, that ærial navigation cannot be turned to a generally useful account, is almost as prevalent as the opinion that ærial voyages are extremely dangerous, and is just as wrongly founded, in my humble opinion. JOHN WISE.

Lancaster, Pa., Oct. 1, 1849.

[The above communication from Mr. Wise, is just such an one as we like. It is reasonable and contains practical information. His opinions respecting steam as an ærial propellant, accords with our own, and as we have expressed them on the subject in our last volume. There is another thing beside the discovery of a more compact power, which would greatly facilitate economical balloon navigation, viz., a more buoyant, cheaper gas than hydrogen. A body of great magnitude is not easily managed—the whole experience of ballooning proves this. We all know that balloons can ascend, float, and move in the atmosphere, and have been propelled by the Roberts, in Paris. These things are not the subjects of discussion. It is the practicability of propelling balloons through the atmosphere as steam vessels on the ocean. There is no man to whom we can more confidently look for a correct account of the probable economical establishment of ærial navigation, than Mr. Wise. We would be content with a balloon speed of ten miles per hour, if the balloon could be perfectly controlled by the æronaut, as a steed its by its rider.

As it respects the last paragraph of the above letter, we must say that the whole history of ballooning, to scientific men, is full of facts, affording just grounds for their opinion, that is, respecting its dangers. Within the past three months, one ærial navigator lost his life in England, Vardale barely escaped with his in our city, and it was certainly a most wonderful escape of the celebrated Mr. Green, in one of his late ascents in London. The subject of Ærial Navigation, has been before the scientific world for 67 years, and we know of no practical improvements that have been made in it since the days of the French Consulate; while during that period, steam navigation and the science of electricity, and other sciences, have advanced with giant strides. Yet for all this we never have, and never will ridicule experiments in ærial navigation. We have hopes like those of our correspondent; but so far as it regarded the balloon excitement that was raised about going to California at the rate of two hundred miles per hour, we deemed it our duty to expose the sham, although believed in by thousands, and the results have faithfully borne us out in our predictions—yea, in every word.

ED.]

Report on Propellers.

[Concluded from page 22.]

It is true that Mr. Emerson, in express terms, in his specification, claims the spiral propelling wheel in every form, and every thing on similar principles, producing similar results. In virtue, then, of his claim, as he has stated it, he would include Loper's, Ericsson's, and even the propeller about to be constructed for the San Jacinto. But it will be seen, by reference to the opinion delivered by the Supreme Court, annexed to Emerson's memorial, (page 8,) that the court say expresely, that the inventor (Mr. Emerson) claims as his improvement, not the whole of the wheel, but merely in the new and superior form which he particularly sets out." Now it will be seen by reference to the several claims here cited, that the new and superior form of Mr, Emerson's propeller, viz; the two-sided blades of a rough form, is not, in anywise, approached in the other claims.

Further, the memorialist claims "a spiral propelling wheel, constructed and operating in the manner I have set forth, in which setting forth he does not once use the word *hoop*, *cylinder*, *perforated hub*, or *elliptic brace*, the patentable features of Ericsson's propellers; neither does he use the word *hub*, the peculiar construction of which only constitutes the patentable features of Loper's propellers.

The pretence that Lopers's propeller is an infringement, has never, to my knowledge, been set up in a court of justice. The claim to the San Jacinto propeller is the claim of a patentee, whose privilege has expired, to an article that has not yet been produced. The very general language of the memorialist's specification, and the interpretation that has been put on it by the courts in New York, would appear to have encouraged Mr. Emerson in the delusive idea that he is the inventor of the stern spiral screw propeller, whereas Stevens, Smith, Beard, and others, have anticipated him by many years, in all the novelties of his invention, except the *trough*.

It is proper that I shoul l add here, that the drawing furnished by the memorialist has been certified as a part of his patent, in a copy of a drawing on file in the patent office, which was filed, as I am informed, ten years after the issue of his patent, long after the inventions of Captains Ericsson and Loper has been introduced into public use, and long subsequent to the filing of a prior drawing, filed under the statute of 1837, which provides for the restoration of patents destroyed by the burning of the Patent Office of the preceding year; and which drawing must necessarily have been the one regarded by the Commissioner of Patents when he passed the several claims of Captains Ericsson and Loper.

Reviewing, then, the facts herein presented, it appears,

1st, That the memorialist claims "the spiral propelling wheel," not confined to forms, but so long "as simillar results are produced by simlar means."

2d, That the Supreme Court says he does not claim the whole of the wheel, but merely the new and superior form, which he particularly sets out, which is the *trough*.

3d, That the spiral propelling wheel was patented long before the issue of the memorialist's patent in 1834.

4th, That the novelties claimed by Emerson, Ericsson, and Loper, vary widely in their purposes and locations, in one common instrument.

5th, That of the 28 cases of alleged use of the memorialist's invention, four are where Ericsson's propeller of 1838 has been used, one is where Ericsson's propeller of 1844 is in use, and to which the memorialist as yet has set up no legal claim, eighteen are for Loper's propeller, one is where the propeller is not yet constructed, and four are unknown—28.

6th, That should the Supreme Court decide the case now before it in Mr. Emerson's favor, and thus establish that Captain Ericsson's propeller of 1838 is an invasion of Mr. Emerson's patent, and that as Mr. Emerson has recovered in the case carried to the Supreme Court, and now pending there, his patent fees for three of the vessels above enumerated, as using the propeller of 1838, his having once obtained satisfaction for his patent fees, it is difficult to understand upon what principle he can now call upon the United States to pay them a second time.

7th, That in the event, then of a decision by the Supreme Court favorable to the claims of the memorialist, he could only claim a patent fee for the use of the propeller which was first used in the Princeton, and which was replaced by the Stevens's scull in 1844.

8th, That the judgement of the proper tribunal would be necessary to validate the memorialist's claim to the one case of Ericsson's propeller of 1844, and the 18 cases of Loper's propeller, neither of which have yet been assailed in the court of justice, so far as I am enabled to ascertain.

9th, That the interests of the memorialist are not likely to be affected in the case of the San Jacinto's propeller, as it is not yet drawn, and will not assimilate to his description in any one feature; added to which, the patent right under which he claims $15,000 fees, in this prospective violation, expired on the 8th of March last.

Further, I am not aware that any propeller has ever been built resembling that described by the memorialist in his specification; in fact, the application of one constructed in accordance with his specification is, in my opinion, positively impracticable for useful purposes. I am, respectfully, yours, &c.,

CHARLES H. HASWELL.

To CHAS WM. SKINNER, Chief of Bureau of Construction, Washington, D. C.

Oil of Turpentine.

Oil of Turpentine, commonly called essence of turpentine, is extracted from several species of turpentine, a semi-liquid resinous substance, which exudes from certain trees of the pine tribe, and is obtained by distilling the resin along with water. This oil is the cheapest of all the volatile species, and, as commonly sold, contains a little resin, from which it may be freed by re-distillation with water. It is colorless, very fluid, and has a very peculiar smell. Its specific gravity at 60 deg. is 0.872; that of the spirit on sale at the shops is 0.876. This oil always reddens litmus paper, because it contains a little succint acid.

100 parts of spirits of wine, of specific gravity 0,84, dissolve only 13 1-4 of oil of turpentine at 72 deg. Fah. When agitated with alcohol at 0.830, the oil retains afterwards one-fifth of its bulk of the spirit; hence this proposed method for purifying oil of turpentine is defective. The oil, if left during four months in contact with air, is capable of absorbing 20 times its bulk of oxygen gas. One volume of rectified oil of turpentine absorbs at the temperature of 72 deg., and under the common atmospheric pressure, 163 times its volume of muriatic acid gas, provided the vessel be kept cool with ice. This mixture being allowed to repose for 24 hours, produces out of the oil from 26 to 47 per cent., of a white crystalline substance, which subsides to the bottom, of a brown, smoking, translucent liquor. Others say that 100 parts oil of turpentine yield 110 of this crystalline matter, which was called by Kind, its discoverer, artificial camphor, from its resemblance in smell and appearance to this substance. Both the solid and the liquid are combinations of muriatic acid and oil of turpentine; indicating the existence of a stearine and an oleine in the latter substance. The liquid compound is lighter than water, and is not decomposed by it, nor does it furnish any more solid matter when more muriatic gas is passed through it. The solid compound, after being washed first with water containing a little carbonate of soda, then with pure water, and finally purified by sublimation with some chalk, lime, ashes, or charcoal, appears as a white translucent, crystalline body, in the form of flexible, tenacious needles. It swims upon the surface of water, diffuses a faint smell of camphor, commonly mixed with that of oil of turpentine, and has rather an aromatic than a camphorated taste. It does not redden litmus paper. Water dissolves a very minute quantity; but cold alcohol of 0.806 dissolves fully one-third of its weight; and if hot, much more, depositing, as it cools, this excess in the form of crystals. The solution is not precipitated by nitrate of silver, which shows that the nature of the muriatic acid is perfectly masked by the combination. It is composed, in 100 parts, of 76.4 carbon, 9.6 hydrogen, and 14 muriatic acid. The muriatic acid, or chlorine, may be separated by distilling an alcoholic solution of the artificial camphor, 12 or 14 times in succession with slaked lime.

Oil of turpentine is best preserved in casks inclosed within others, with water between the two. Its principal use is for making varnishes, and as a remedy for the tape-worm.

Death by a Drop of Laudanum.

There is an account in the last number of the New England Surgical Journal, of a child being poisoned by the administration of one drop of laudanum, by its mother, for griping. It was a fine healthy child, and it lived but eleven hours after the laudanum was administered. People should be very careful about the use of drugs that are reputed dangerous, especially in administering the same to children, who cannot tell the state of their feelings.

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New Inventions.

Pictures on Glass.

Our Philadelphia exchanges state that Messrs. Langenheim, of that city, have discovered the art of making photographic pictures on glass, such as portraits, landscape views, copies of daguerreotypes, &c.

At a recent meeting of the Paris Academy of Sciences, this process was described by M. Reghault, in behalf of M. Evrard, of Lille, who is said to have discovered it in 1847. The princple of the discovery is a matrix of albumen, rendered sensible to the action of light, by aceto-nitrate of silver, and spread in a thin layer on a plate of glass. The process is to take a certain number of the white of eggs, and remove all the non-transparent part, and then add a few drops of a saturated solution of iodate of potassium, then beat the eggs into froth and allow it to settle. The plate of glass is well cleaned with alcohol, and the albumen is then spread over the glass in a thin layer with another piece of glass. The glass must have a perfect thin coat adhering to it, when it is hung up by one of the corners to drain off the excess. The glass is then placed flat upon a level board, screened from dust and allowed to dry. When dry it is submitted to a good heat, but not so much that the albumen will peel off. After this the glass is dipped into a solution of aceto-nitrate of silver, face downwards, after which it is removed and immersed in a basin of clean water, being stirred in it for a few seconds, then taken out, held up by a corner, and is completely sensitive, moist or dry, to receive photographic impressions. It is then placed in the camera obscura, after which it is dipped in a bath of galic acid, to which is added a little of aceto-nitrate of silver. Care is taken not to let the glass remain too long in this. After being dipped in the galic acid it is washed in water and then immersed in a solution of the bromide of potassium (20 parts to 100 of water,) after which it is carefully and well washed in water, and left to dry in a horizontal position in a dark room.

This is a description of the process of producing photographic pictures on glass, as communicated to the Paris Academy of Sciences. There are some other little nic-nacs, which are essential to a successful and good picture—but this is a very minute description—one sufficient for an artist to do all the rest himself.

Improvement in Gun Casting.

A new method has been resorted to at the Cannon Foundry, near Pittsburgh, for the production of guns. Instead of bringing them from the mould solid, and afterwards boring them, they are cast with the proper bore, the core being carefully prepared so as to enclose a circle of cold water, which it receives and discharges in a continuous current, during the process of cooling, the object, probably, being to chill the inner surface more rapidly than the outer, and thereby give to it a greater density and strength. The plan is the suggestion of Lieut. Rodman, and two guns—one cast on the old and the other on the new plan—having been subjected to the usual tests, the first exploded on the 84th, and the latter on the 255th round. This shows a great superiority over the common mode of making cannon, and if future experiments substantiate this successful one, Lieut. Rodman's invention will come into general use.

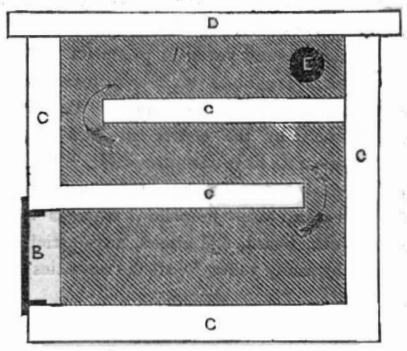
Russian Furnace.

This is a furnace which Mr. S. C. Palmer, of Foxboro', Mass., has described to us in an article for the benefit of our readers who use wood for fuel.

Fig. 1 is a longitudinal section showing a fire place and flues in the interior; A the fire place; B is a common iron door with closing aperture for draught; C is the brick work; D is a soap stone cap; E is a short funnel connecting flues with chimney; this should have a damper which can be closed tight, it may be reached back of the furnace. The furnace should set a few inches from the chimney so as to save the heat from all sides. This figure shows but two flues.

Fig. 2 is a transverse section, showing the fire place with four flues in the interior. The letters correspond with fig. 1; the figures are the flues. They are generally built of brick which work in as easily as into other kinds of work, but a soap stone cap makes them more durable. They are sometimes made entirely of soapstone, but I do not know whether they operate as well.

Fig. 1.

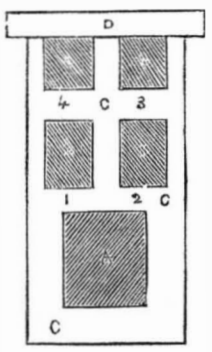


The fire place is filled with wood, and the dampers opened till the wood gets well on fire. The dampers are then closed perfectly tight, though not so suddenly as to make it smoke. It will want no more attention till the wood is nearly gone, when it can be replenished and immediately shut up if there are plenty of coals. It never need be opened more than three times a day in coldest weather, morning, noon and night, and in more moderate weather not more than once or twice. The draught is generally good.

A common form is about three feet in length, sixteen inches wide, two and a half feet high, —though the size should depend upon the size of the room. They may be built upon the floor by having a sufficient thickness of brick between the floor and fire. The cost of one made all of brick, is not over four dollars, (pressed brick.) A new furnace must be dry before it is used.

Mr. Palmer says: "I have witnessed their operations, more or less, for eight years, and constantly for two years of that time. A furnace consumes less wood than a stove, and requires but little care. It preserves an agreeable and equible temperature in the room, as it presents a far greater amount of heating surface than a stove, consequently it does not require to be so intensely heated."

Fig. 2.



He is acquainted in two villages where they are much used in sitting rooms, but they are not suitable for rooms that are only to be heated occasionally. During the past year Mr. Palmer says, "we have used two of these furnaces, one in the sitting room and one in the shop, and we would not use two stoves instead of them for fifty dollars." The fire never goes out of them from November to April.

The objection which some urge against them is their want of beauty. We know of no kind of paint that is suitable to use for them, but if they are neatly built, and frequently whitewashed with a little whitening, in which is mixed some alum water, they look very well. These furnaces could be built to burn coal as well as wood.

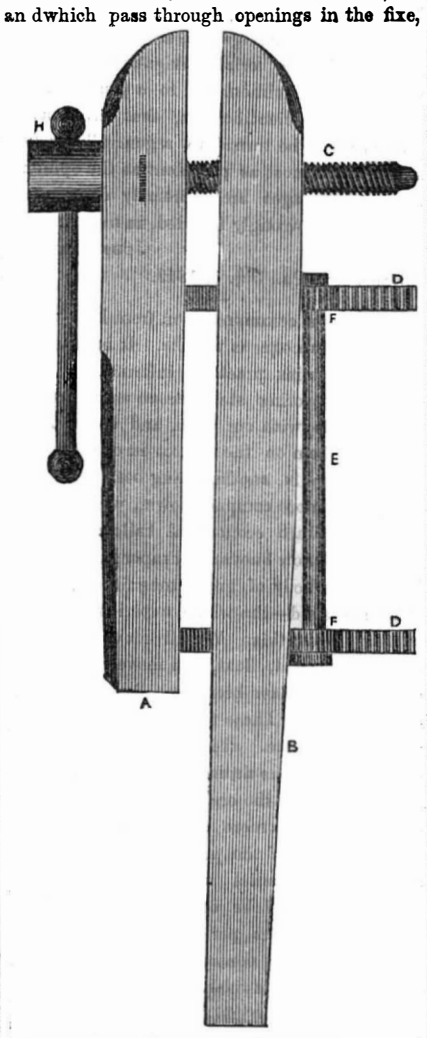
We are much obliged to Mr. Palmer for calling our attention to this subject. We know something about them, having seen them used while journeying in some other parts of the world, and we consider them an excellent and cheap apparatus for heating many kinds of apartments.

Telegraph Manipulator.

Mr. S. Thomas, of Norwich, N. Y., has invented a telegraphic manipulator. It is for the purpose of transcribing the messages.

Cowle's Patent Parallel Vice.

This is an improvement on the Parallel Vice recently patented by Josiah Cowles, (the inventor,) who resides in Belchertown, Mass., and is a very simple and beautiful invention. A is the moveable jaw, and B the permanent one C is the screw and H the lever. D D are two racks secured firmly to the moveable jaw, A. an dwhich pass through openings in the fixe,



jaw, B, and mesh into two small pinions, F F which are secured on a vertical arbor, E, the ends of which are secured in small journal boxes or bearings, attached to the back of jaw, B. The racks, therefore, do not pass through the exact middle part of the jaw, but they are held with the utmost steadiness by the pinions and it is not possible for the jaws to be in any other than a true parallel position. It operates very finely. The claim is for "the screw and jaws in combination with the racks, pinion, and arbor." More information about rights, &c., may be obtained by letter, (*p. p.*), addressed to the ingenious inventor.

Improved Packing for Pumps.

Fig. 2. Fig. 1.

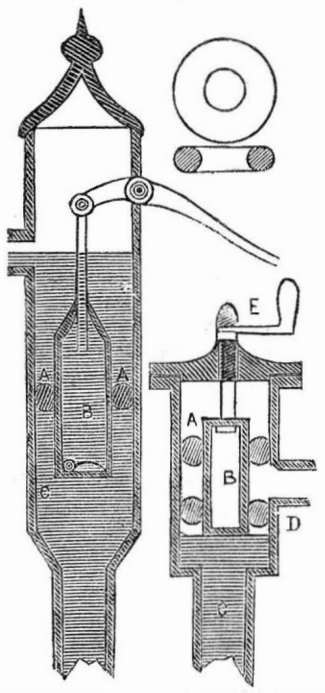


Fig. 3.

This is a plan of packing by employing a packing ring of vulcanized india rubber around the piston, by which the packing will have a rolling motion upon its own centre. Fig. 1 is a plan and section of the ring just before being applied to the piston. The cross section is in the form of a circle; the interior diameter of this ring is less than the exterior diameter of the piston. It is therefore necessary to stretch it before it can get on the piston, and the exterior diameter of the ring is a little more than the interior diameter of the cylinder, and it has therefore to be squeezed up or contracted. When placed in the cylinder, therefore, it has the eliptical shape, as represented by A, fig. 2, (which is a sectional elevation of the common lifting pump,) by being compressed between the cylinder and the barrel or piston. It forms a very tight packing. Upon an upward and downward motion of the piston, the ring moves round on the piston, and will always preserve its contact with the piston and cylinder, owing to its compressed state, and by revolving the friction is indeed but very small in the working of the pump. For light pumps these packing rings may be made hollow and filled with air, but for large rings they must be made solid. Fig. 3 shows a vertical section of this kind of packing applied to a screw piston faucet. A is the barrel or cylinder of the faucet; B is the piston valve; C is the fountain passage; D the discharge, and E the handle. Two rings of elastic india rubber are used around B. The valve being down, as shown, the fluid cannot pass from C to D, but turning the handle, E, the piston valve, B, rises, and by the rolling action of the rings, they also rise and move past the opening, D, for the free passage of the fluid. The passages should be narrow, or with a rose on the inside of them, to prevent the rings springing in.

Discoveries in Electricity.

Worcester, Oct 1, 1849.

Messrs. Munn & Co.: *Gentlemen*—Permit me, through your columns, to announce the perfect success of the Hydro Electric Light, according to the circular published in your journal last winter. With the risk of being considered an erratic genius, I choose the course that I have taken in this matter. Had I filed a specification in any patent office, at home or abroad, at the time of the discovery, long ere this we would have had a score of discoverers disputing the priority of the subject; but as it is, the light has been burning on a large scale for months, without a single attempt to dispute the originality in point of time or fact.

You are undoubtedly aware that in cases as important as this, capital can always find or make men-of-straw claims, to worry the inventor into terms. Now my secret is at issue with capital, not the lovers of science. Nothing would give me more pleasure than to communicate to the readers of your paper the principles that govern the action of my apparatus, knowing as I do, that they need but the action of an intelligent mind to be the means of immense good to my fellow men. But my brethren are not so suffering, in this matter, that I feel called upon to sacrifice my own interests for their sakes. I mean that at least one discovery shall stand undisputed, and that is the *condensing of the Electric Fluid.* I claim the knowledge of compressing the electric fluid as we do the atmosphere or the gases —the forcing and accumulation of it in a receiver, till the receiver bursts from the effects of *pressure.* This I have done frequently, in the presence of different persons, within the last few months, and will shortly do again in your city. I gather what is termed the electric fluid, as easily as a boiler is filled with water, and I retain or use it with greater facility than we can steam. The decomposition of water is but a minor application of the discovery, and only used first because it was the cheapest; and I assure you that without the elements around us change in their material or nature, the days of steam are numbered. As regards its use for the purpose of light, the invention has passed, *conditionally*, from my hands into those of heavy capitalists, who will soon settle your difficulties with the gas companies.

Yours,

Henry M. Paine.

Late foreign papers state that a new and superior method of rotting flax has just been discovered. We learn that a very superior discovery of this kind has also been made at Maysville, Ky.

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Scientific American

NEW YORK, OCTOBER 13, 1849.

Industrial Fairs.

Fairs, for the exhibition of works of art, are of very ancient origin; their date, indeed, is wrapt in fabled obscurity. From all that we can gather on the subject, Greece appears to have been the Mother of Industrial Fairs, and Athens, the capital of Attica, has the credit of instituting them. Strabo remarks, that "whensoever it was practicable to collect a multitude of Greeks, either by superstitious rites or amusements, commerce never failed to be there." The method employed for establishing trade in Greece, was simply "to promulgate reports of miracles having been performed in some obscure place until it became famous for pilgrimages and fairs." To attract visitors for profit and pleasure, horse and chariot races were instituted, and prizes awarded to victors in various kinds of strife, such as music, poetry, painting, &c. The sagacious Romans saw through these institutions, and termed the national games of the Greeks the *Commerce of Olympia*. Almost every year some famous fair was held at Delphi,, Nemea, Delos, or the Corinthian Isthmus. At Thermopylæ, a fair was held every autumn, at the Assembly of the States General of Greece, and the Fairs of Olympia were held sacred in every case from the horrors of war; yea, the Greeks were more advanced in civilization than nations are at the present day, for they knew not the modern system of *blockade*, as every species of their merchandize could be transported to Olympia, in safety, through any of the States. The Athenians were a great trading people, and they had a law for punishing those who dared to reproach any of their citizens for displaying wares at open sale. Nearly all Greece, with the exception of Lacedemonia, was at one time a vast manufactory, which furnished every object of luxury and elegance, the remains of which are with us to the present day. The purple of Tyre, the bronze works of Corinth, the glass of Egypt, the stuffs of Elis, and the inimitable vases of Anaphlystus, were all exhibited there.

After the decline of Grecian greatness, and when under the sway of the Roman, she still had her commercial fairs, the spirit of which was transmitted to Italy, and displayed in the cities of Venice, Genoa, Florence and Mantua, and was taken up by those famous manufacturing cities of Germany, Antwerp, Ghent, Bruges, &c. The Flemings, with their knowledge of manufactures, carried the spirit of Fairs to England, where they have received the fostering care of that manufacturing and commercial people. For a great number of years France has been famous for periodical displays of the handiworks of her artisans and mechanics. Agricultural Fairs have been long known to almost every nation, and were we as well acquainted with Hindoo history as we are with the Grecian, it is possible, that we might find just grounds to dispute the claims of Greece to priority in the origin of Industrial Fairs.

Such Institutions have always been productive of good to every place where they have been established; and our country is becoming sensibly awakened to their importance, especially in our rural districts. In some of our principal cities they have been instituted for a long time, and Boston, Baltimore, Philadelphia and New York, have become somewhat celebrated for their annual exhibitions. There can be no question of their utility. They encourage emulation in the useful and elegant arts, by inspiring a laudable spirit in the competitors to excel. To these Fairs there come the buyers also, to see what is new and to judge, by comparison, respecting the relative merits of the works they desire to purchase. They are excellent Institutions for enlightening the mind with a knowledge of the inventive spirit and constructive skill of our people, for in them are concentrated the products of almost every section of our great and glorious Republic. Let our people encourage Industrial Fairs; it is not possible for them to do evil, therefore they must be the means of doing good.

There is one thing essentially necessary to perpetuate such good institutions, prevent them from decaying and becoming (to use a vulgar and pithy expression,) *threadbare*, viz., to give them always an air of freshness. To do this, all new inventions, comprehending important improvements in machinery and works of art, should be conspicuous, so that visitors may see what they are at once, and derive some knowledge of their nature. It is no uncommon thing to see the same articles exhibited for a succession of years at some of our Fairs. The faces of some of them are quite familiar to constant visitors. A model of a disproved paddle wheel here, an old fashioned washing machine there, and scattered over the wide expanse, to give an air of antique grandeur to the scene, are many invaluable inventions that belong to the year *one*. We do not like to see people noticing these things with an exclamation point "*sham*!" There should be some stern discrimination used in the admission of such things, and it would be well to make every depositor describe his article or machine pointedly and legibly on a card attached to it. No one article should be admitted to two Fairs successively, in one place.

Our views, as expressed, are thrown out with a hearty good will for the prosperity and perpetuity of such institutions, because we believe that when they are well conducted, they tend greatly to advance science, and improvements in the useful and elegant arts.

Great Fair of the American Institute--No 1.

The Twenty-third Annual Fair of this Institute opened on the 2nd inst. During the past week the weather was very unfavorable, and the preparations were somewhat disturbed on that account; but during the present week it has been carrying a full head of steam, and the exhibition has been very interesting. It is not our purpose to describe any thing that is old, or that has no merit to recommend it; we therefore will notice those inventions only, which have something to recommend them. We never take up a catalogue and notice articles in parrot rotation, from such a monitor. We must see things with our eyes before they find a place in our columns. We will therefore not describe things under different heads, nor as they are arranged at Castle Garden; suffice it to say that the bridge, on the right hand and left, is graced as heretofore, with agricultural implements, carriages, presses, washing machines, &c. The entrance to the Castle, or old Battery, sports as usual the necessary quantity of filtering apparatus, and a few hydraulic machines. The interior is well stocked with more than we are able to describe. On the back part (front to the Bay) is the machine shop, fitted up as last year for machinery to be propelled by steam power. This department (always one of great interest to us) is unusually attractive this year, from this fact, that there are not a few first class new inventions in full operation. The machinery is driven by a splendid engine, made by Mr. Burdon, of Brooklyn; and at the extreme end is that wonderful machine,

DODGE'S IMPROVED COP SPINNER.

This is an American invention, which at the present moment is attracting a great deal of attention in England, and where its merits have at once been acknowledged by the cotton manufacturers of Manchester. It is no doubt destined to drive every other cotton spinning machine out of the market, and companies who are engaged in erecting factories at present, would do well to examine it before they purchase new spinning machinery. It cannot be expected that we can give a detailed description of this invention here;—suffice it to say, that it combines the qualities of the throstle and mule in one frame. The rovings from bobbins, at the top of the frame, are drawn through drawing rollers, like the throstle frame. —and from the drawing rollers, the thread passes at once to a small traveller, moving around a ring which surrounds the cop spindle, and the which ring has a coping motion up and down, to build the cop on the spindle, by a cam gearing below, connected by a rocking shaft to the main driving shaft. The whole of this machinery occupies no more room than the old throsle frame; no carriage, like the mule frame, is used, the whole is compact and simple, and it does its work well. Were it for no other object than less room and machinery, this would be a meritorious invention, but it is asserted, (and we have seen certifitates to that effect,) that it will spin 100 per cent. more yarn than the flyer spindle, with one half the power, compared to the quantity produced; and that 2,320 spindles produces as much yarn as 4,600 spindles on the old machines. There can be no question about the superior and safe speed with which this machine can be driven. We could say a great deal more about it, had we room. The inventors and proprietors are Mr. John C. Dodge & Sons, Dodgeville, Attleborough, Mass.

JONES' PATENT BORING MACHINE.

A most excellent Boring Machine is exhibited by Mr. Joseph Jones, of Camden, New Jersey. It is the best machine for boring hubs, felloes, &c. we have ever seen. The feed table is a capital one; it can arrange the article to be bored, (no matter what its shape may be), to any angle—to bore it straight—high or low; and to wheel it round from one side to the other with great rapidity.

SWINGLES' PATENT BORING AND MORTISING MACHINE.

This is a Texan machine and a good one it is. It was invented by A. Swingle, of Texas, and patented last year. It is intended to be driven by power, and it combines the best mode of operating the hollow augur that ever we have seen in any machine at the Fair. The augur receives a very rapid motion from bevel gearing; and the square chisel on the outside has but a shell of the wood to cut down along with the augur, which it accomplishes with great dexterity, making a very smooth mortice at the sametime. Mr. Swingle's machines are manufactured by N. Hunt & Co., No. 7 Water Street, Boston, Mass.

HARTSON'S LATHES AND PLANING MACHINES.

Mr. Hartson, of Vesey Street, this city, has a number of machines for the machine shop in operation. We speak decidedly when we say that he has added considerable improvements to his machines since last year. What a change has taken place in our machine shops within the last ten or fifteen years; then we used to think that any kind of tool was good enough, if it just "went." But beauty is now combined with quality, and Mr. Hartson knows how to do this, his tools are not only beautiful, but strong and accurate likewise.

HILL'S HAND-TURNING LATHES.

Mr. S. C. Hills, No. 43 Fulton Street, New York, exhibits a very fine Hand-turning Lathe, a tool which is of universal application, and can be geared for circular sawing as well as turning. We understand that Mr. Hills manufactures these tools and sells them at very reasonable prices.

SEVERSON'S IRON BRIDGE.

In the Gallery is a very neat model of a new Iron Bridge, invented by Benjamin Severson, Little Falls, N. Y. It stands near to one belonging to Mr. Rider, and its simplicity in comparison with it, is self-evident. It astonished the spectators to see three men, weighing five hundred pounds standing on the apparent frail bridge, not more than six inches wide, and eighteen inches long, and all the effect produced on it, was, what no person could see—there it stood like a well made boot.

BEAUTIFUL DRAWING.

The finest samples of mechanical drawing that we have ever seen exhibited at the Fair, are three views of the Marine Engines of the Steamships Cherokee and Tennessee. They are drawn by Mr. Frederick Cook, draughtsman, at the Novelty Works, who is author of the American Condensing Engine.

NEW BALL AXLE.

Mr. Junius Smith, of Bridgeport, Conn., exhibits a new kind of ball axle for carriages,—one very different from any that we have ever seen before. The ball is on the axle, with a groove cut around it, into which two spring eliptical clamps, secured to an uncoupling nut outside, project and couple the axle with the wheel; but the beauty of it is this: the inner end of the ball that goes into the wheel is tapered, and by simply pushing the wheel against the axle the coupling clamps inside gently spread, until it comes to the groove of the ball, (or rather it should be called a *cone*,) when the spring clamps inside slip into the groove on the core of the axle and self-couples the two together. It is a very excellent invention.

We will notice more machinery, &c., next week. We give the residences of the inventors and manufacturers, knowing that this will be of service to many of our subscribers who may wish to purchase at some future period—they will know where to write and to whom—let their letters be *p. p.* There are some droll inventions, which must await for our humor before we can do them justice by a notice, and that spirit is not overshadowing us at present.

New Jersey Monopolies.

Commodore Stockton's appeal to the people of New Jersey, in relation to the rail-roads and canals with which he is connected, has not failed of receiving comments from the press of all sections. The whole country is interested in this question, and we trust that public opinion will correct the wrongs to which they have been subjected by this system of over-grown and oppressive monopoly. The question should be adjusted by sound, impartial legislation, without attempting to break it down, ill advisedly, to the detriment of those who have means invested in it. The State of New Jersey has been assailed and ridiculed by our people, in terms that do not meet our approbation—the result is plainly distinguishable. We are far from believing that any citizen of New Jersey would wish to wrest from Com. Stockton, his large investment in these enterprizes, without a proper equivalent. Their object seems to be to reduce the rates of travel upon them, thus bringing their State on a par-excellence with others. This desirable result, it appears, cannot be accomplished, unless the State violate, or render (through their Legislative authority) null and void the contracts with the companies, and take possession of them. If this can be accomplished it would, no doubt, be highly beneficial to the State, and equally so to the country. For ourselves we are opposed to any system of monopoly, and we particularly believe in this instance that the revenues accruing from the different railroads and canals, in the State, would be larger than they now are, by a reasonable reduction of the rates. The fare from this city to Philadelphia should not be over $2, at least, and our opinion is that hundreds of persons residing in each of these cities, who have never travelled over this rout, would do so at the price above stated.

This subject is a prolific one, requiring cautious management—and we shall be glad to see it well settled, honorable to the State and beneficial to the country.

Winds.

What have we not heard about east winds —their withering, biting dryness as represented by travellers who have journeyed afar in the old world. To us the east wind brings no fear of the Simoon or the Sirocco. When it comes to us, its wings are softened with the waters of the broad Atlantic. But if we have no fears of the east wind here, it is not so when it puts a northern que in its ancient beaver. On last Saturday, our city was visited with one of the most severe north east gales on record. Large trees were twisted like withes; vessels were driven from our docks out to sea; houses were blown down, especially a great number in the course of erection. The tide rose to a great height, and a great number of houses along the wharf were flooded in their lower parts. Quite a number of accidents occurred to individuals, but by a merciful Providence few serious ones; the general feeling is one of thankfulness on this account, as the storm for six hours was terriffic.

The Life Boats on the Jersey Coast which were furnished by government at an expense of $10,000 are said to be of no use because they are not taken care of, Uncle Sam should look after this, for he will be held responsible for them, and he should not pay for dead boats in the place of life boats, which the boats of Jersey are.

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LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending October 6, 1849.

To Ambrose Torrey, of Boston, Mass., for improved Self-acting Waste Gate or Sluice. Patented Oct. 2, 1849.

To Henry M. Paine, of Worcester, Mass., for improvement in portable Copying Presses. Patented Oct. 2, 1849.

To Charles Clark, of West Troy, N. Y., for improvement in machinery for Spinning Flax, &c. Patented Oct. 2, 1849.

To Warren D. Hatch, of Worcester, Mass., for improvements in Couplings for Cars. Patented Oct. 2, 1849.

To William A. Chapin, Jr., of St. Johnsbury, Vt., for improvement in varying the speed of the Mandrel in Lathes. Patented Oct. 2, 1849.

To Jehial T. Farrand and William Hinman, of Port Byron, N. Y., for improvement in machinery for raising water from wells. Patented Oct. 2, 1849.

To Green S. Cox, of Barbour Co., Ala. for improved composition for metallic packing in steam engines. Patented Oct. 2, 1849.

To Daniel W. Hayden, of Windham, Conn., for improvement in Carding Machines. Patented Oct. 2, 1849.

To Andrew L. Brown, of New Haven, Conn., for improvement in apparatus for making Mould Candles. Patented Oct. 2, 1849.

To Norman M. Isham and Erastus E. Marcy, of Hartford Conn., for process for making Steel. Patented Nov. 2, 1848.

To S. W. Rogers, of Baltimore, Md., for improved foot-valve of steam engines. Patented Oct. 2, 1849.

To Nehemiah Hodge, of North Adams, Mass., for improvement in the mode of operating Brakes for Cars. Patented Oct. 2, 1849.

To Lemuel P. Jenks, of Boston, Mass., for improved arrangement of the conductors in centrifugal Gold-Washers. Patented Oct. 2, 1849.

To Thomas G. Clinton & George H. and Edward H. Knight, of Cincinnati, Ohio, for improvement in adjustable Churn Dashers. Patented Oct. 2, 1849.

To William B. Stewart, of Cincinnati, Ohio, for improvement in machines for making Washboards. Patented Oct. 2, 1849.

To Sherburne C. Blodgett, of Georgetown, Mass., & John A. Lerow, of Boston, Mass., for improvements in sewing machines. Patented Oct. 2, 1849.

To Dennis S. Stow, of Cohoes, N. Y., for improvements in machinery for mitre-sawing. Patented Oct. 2, 1849.

To John J. De Haven, of Reading, Pa., for removable water-lining for the fire-boxes of steam-boilers. Patented Oct. 2, 1849.

To Eli R. Horner & Wm. Holland, of Fayetteville, Pa., for improvement in Boot Crimps. Patented Oct. 2, 1849.

To Louis Lacharme St. Leger de Feugeret, of France, for improvement in Gold Washers. Patented Oct. 2, 1849.

To Israel F. Brown, of Columbus, Ga., for improved machines for Filing Circular Saws. Patented Oct. 2, 1849.

State of New York.

New-York contains a population of more than two and a half millions, being greater than that of any other State in the Union. It has 34 representatives in Congress. It has the longest railroad. It has ten colleges. There are 156 academies that made reports this last year to the Regents of the New York City University. Besides these, there are 55 Female Seminaries, and several unincorporated academies. There are 463,000 pupils that attend the common schools. There are 4,399 ministers of the Gospel; the average amount of their salaries is nearly $350 a year.

Trial by Jury in Patent Cases.—No. 2.

The writer in the Charleston Mercury to prove that Judges Wayne and Ex-Governor Seward were wrong in the opinions the latter expressed, and the decision the former made, in reference to the practice of the English Supreme Court, granting a perpetual injunction, instead of a provisional one until the matter was decided by a jury trial, goes on to say, "Against Judge Wayne, we have been furnished with the following authorities from Judges now on the Bench, and in full vigor, and none of them, either, 'more than eighty,' or near 'one hundred' years old: First, In the case of Russell vs. Barnsley, the present Vice Chancellor of England said, 'he did not recollect a case where a defendant had stated his wish to try the question at law, that the Court had refused to give him the opportunity.' 2d. In Bacon vs. Jones, Lord Cottenham, the present Lord Chancellor of England, said he would not say that a case might not happen in which an injunction might be granted without having recourse to a trial at law. 'Although,' says he, 'this is certainly not very likely to happen, and I am not aware of any case in which it has happened." 3d. Again, in the case of Harmon vs. Jones, the same Lord Chancellor, with the film of 'more than eighty, or near one hundred years,' over him, says: 'This order for an injunction, being unaccompanied by any direction for putting the question in a course of legal inquiry, not only restrains the defendants from taking the plaintiff's premises, but *prevents* them from obtaining the decision of a Court of Law, upon the rights which they claim. It is said the omission of such a direction was owing to its not having been asked in the Court below; but it is the duty of the Court to give such direction, whether it be asked for or not. The proper officer of the Court, upon an application of this kind, is, not to ascertain the existence of a legal right, but solely to protect the property UNTIL the right can be determined by the jurisdiction to which it properly belongs. It is the duty of this Court to confine itself within the limits of its own jurisdiction; and, therefore, it is a fundamental error in an order of this kind, to assume *finally* to dispose of legal rights, and not to confine itself in protecting the property pending the adjudication of those rights by a Court of Law.'

But this is not all, it seems, that Lord Cottenham has said. He has taken every opportunity to impress the same wholesome "course of Equity." Thus, in Spottswood vs. Clarke, (a patent case) he says, "I have often expressed my opinion, that, unless a case of this kind, depending upon a legal right, is very clear, it is the duty of the Court to take care that the right be ascertained before it exercises its jurisdiction by injunction." (Interlocutory.) 'One objection to that course is, that it compels future litigation, for it orders the plaintiff to bring an action; whereas, by adopting the alternative course, (suspending the injunction, with liberty to the plaintiff to bring an action) it enables him to pause a little, and consider whether it is worth his while to embark in such a course of litigation as will be necessary to establish the right on which he insists.' 'But the greatest of all objections is, that the Court runs the risk of doing the greatest injustice in case its opinion upon the legal right should turn out to be erroneous.' His Lordship, thereupon, dissolved the injunction which had been ordered by the Vice Chancellor: 'The defendant to keep an account, and the plaintiff to be at liberty to bring an action.' 3d. Again, in Stevens vs. Keating, the same learned Judge says: "I have, in common with other Judges, of whom Lord Eldon was one, frequently expressed my opinion, that in doubtful cases great care ought to be taken by this Court not to grant an injunction, which is at all likely to prove unfounded; because, if it turns out to be unfounded, you are doing irreparable injury to the party restrained; whereas, by withholding it, you may be permitting some injustice, but certainly not an injustice at all equal to that which you are doing by improperly granting it."

4th. We offer one more authority from an American book just published, and which we are told is of the highest merit. We refer to Mr. Curtis's Treatise on Patents, which is referred to by Mr. Justice Wayne, and therefore recognised by him as entitled to some consideration. After that we will ask a single question in conclusion. Mr. Curtis says, sec. 340: 'A denial in the answer as to the validity of the patent, or the fact of infringement, will be sufficient to entitle the defendant to further investigation in an action of law.' And in sec. 338 he says: 'It seems that where both parties claim under patents, the Court cannot grant an injunction until the rights have been tried at law. This was held in Baskett versus Cunningham, 2d Eden's Reps. 137, in relation to two conflicting patents for printing Bibles; and it has not been overruled by any subsequent case.'

We have neither time or space to go further than these selections from the authorities furnished us, in reply to Judge Wayne's statement of a fact, (not his expression of an opinion) as to the course of Equity in England and America. He either has or has not read the decision of Lord Cottenham and other English Judges of the last "more than eighty" and "nearly one hundred years." If he has not read them he ought not to make assertions as to what they contain. If he has read them, he ought to state them correcly. He must plead ignorance or admit he is unfair in his statement. But while he lives the world will never be unanimous as to his ignorance. He would prefer anything to such an admission.

We now ask the simple concluding question. Are we ready—is the spirit of our people broken and willing—to give up the guaranty of their State Constitution of the preservation or the trial by Jury? and are they willing in our Bar—a profession that boasts itself ever to have been foremost in the cause of liberty—willing that Judge Wayne, or Gov. Seward, shall be sent here to abrogate the trial by Jury, and substitute for the judgement of twelve peers, a single individual of their own appointment, with all the powers, privileges, and duties, which once belonged to the venerable Saxon institution?

We have regarded these matters in a serious aspect, and entirely distinct from any interest in the result of a mere lawsuit. We think it important that the power of the Federal Judiciary should have some limits in its exercise among us. Suppose Gov. Seward should file a bill in the Federal Chancery in behalf of his friend or rival, Gerrit Smith, in which he should pray that Gov. Seabrook might be perpetually enjoined from any longer controlling or intermeddling with his own slaves, and that he should account to the said Gerrit Smith for the past profits made by them, upon the ground of some rigma-role title set forth and pretended by the complainant, and sustained and sworn to by affidavits of such auxiliaries of the 'sciences and mechanic arts' at Washington City, as 'Charles M. Keller or Thos. P. Jones.' And, suppose the defendant should deny altogether the title of the complainant, and denounce it as a fraud and a trick, and demand a trial at law and the 'judgment of his peers.' Let any one answer whether he would be satisfied to see such a privilege denied to his neighbor. Would he be content to see such a case go off upon such a decree as the Federal Judges might have moulded to their hands by the 'perfectly safe and conservative' opinions of Gov. Seward? Let him answer this question, and he will then see why we call attention to this matter. If it is to be left for such Judges to decide upon our rights, and they shall thus get rid of the old fashioned incumbrance of a jury, then law will soon be condensed into the simple formula; Hoc volo, sic jubeo, sit pro ratione voluntas.

[We will finish this subject next week, by giving our own views on the subject.

History of the Lake Superior Copper Mines.

The Indians regarded the huge rocks of copper on Lake Superior shore as a present from the Great Spirit of the waters, who threw them up from the bottom of the Lake, and they therefore looked upon them with reverence. The Jesuits visited the copper region about two hundred years ago, but their records do not mention any proper mining operation as having been performed by the Indians; but it was discovered in the diggings at Eagle River in 1844, that the aborigines had extracted the metal from the veins and had made knives and spear-heads of the sheet-copper which they had obtained.

The famous Dr. Jackson searched in nearly all the mines, and invariably found Indian stone-hammers and proofs of superficial mining by the native tribes. On the attention of the Directors of the mines being called to these curiosities, they readily entered into the work of searching for them, and cart-loads of Indian tools have already been excavated. At the North-West Company's Mines, near Eagle Harbor, there was a depression of six feet in the metalliferous lode, where the Indians had mined out the sheets of copper. Barrels-full of hammers, much worn, were thrown out of this excavation, and a number of these have been preserved for the Government Collection.

Dr. Jackson, in an interesting description before the late meeting of the American Scientific Association, says it is an error to suppose that any more civilized or superior race of people did this work; for the tools betray their true Chippeway origin, and are such as all Northern Indians made use of prior to the coming of Europeans. He was perfectly convinced that most of the veins now opened and wrought by European and American miners were known and worked superficially by the Red Men, hundreds if not thousands of years before America was discovered by Columbus!

It seems, however, that at the time of the early Jesuit Missions of the French in 1640, the natives had either ceased to work the metal from the veins in place, or that they concealed the fact from the Jesuit Fathers. The latter is most probably the case; for they were as the priests acknowledge, very unwilling to tell them where they obtained their native copper, and it is probable that they never did confess to them the true localities of the copper lodes—for the relations published by the Missionaries, although they mention the abundance of native copper, and the probability of there being good mines that might be profitably wrought, do not mention any vein or mention any copper as seen in the rocks.

Soon after the close of the French War, Alexander Henry, an enterprising English trader, set out on a voyage to Mackinaw, in 1760, and was taken prisoner by the Indians on the capture of Fort Mackinaw. He was adopted as a brother by an Indian who rescued him, and travelled with him extensively on the shores of Lake Superior. This voyage extended from 1760 to 1776, and in 1809 his Travels were printed in New York. He describes the Copper of the Indians, but he does not mention any locality where the metals occur in place. In more modern times we have the observation of Henry R. Schoolcraft, who accompanied Gen. Cass in his travels on the Lake, and who visited the great block of native Copper on the Ontanagon. During the last war with England, or soon after, Dr. Francis Le Baron, of Plymouth, visited the Lake, and brought home a piece of the same great rock.

The first proper scientific explorations, however, in the Mineral Lands of Lake Superior, were made by the late lamentated Dr. Douglass Houghton, while employed as State Geologist of Michigan, and subsequently while engaged in a connected Linear and Geological Survey under the direction of the General Government. His publications were Annual Reports, in which he described the Geology of the country and the minerals he had discovered.

In 1845, Dr. Jackson was re-employed to examine the Mineral Lands, and added much to our previous knowledge—surveying the veins belonging to the Pittsburgh and Boston Copper Company; and particularly the Cliff Mine, now so celebrated, and which Dr. J. considers the model Mine of the country and highly creditable to the faith and enterprise of its owners and the indomitable preservance and skill of their miners.

In the Fall of 1847, by authority of an Act of Congress, the Geological and Mineralogical Survey of the Mineral Lands of the United States in Michigan, was commenced, which is not yet fully reported.

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TO CORRESPONDENTS.

"T. J. K., of Va."—There are several different kinds of hay presses in use in this country, but we have no information where one could be purchased. Would be pleased to inform you if we could. $1 received.

"S. P, of Conn."—A Microscope of the power indicated in your letter can be bought for $25. If you will send us the money we will make the purchase for you with pleasure.

"P. F., of Canada West."—Such a work as you refer to can be purchased here for $1,50. We noticed that your note bears date June 18. It has but just reached us, from some cause.

"W. H. S., of Baltimore."—There is no good work published upon the screw propeller, that we know of.

"S. H., of N. Y."—No. 34 of Vol. 4, cannot be supplied, we should have sent it with the other papers, if we had it.

"J. H. B., of S. C."—We can furnish you Vols. 3 and 4 of the "Scientific American," bound, for $2,75 each; volumes 1 and 2 are completely exhausted, and have been for a long time. We would say to all our subscribers that Vols. 3 and 4 in sheets cannot be furnished complete. At the commencement of Vol. 4 we printed 12,000 copies weekly, thinking the edition would be sufficiently large for all orders. We now print 15,000 each week, and request that persons intending to subscribe will do so early, in order to insure a complete volume.

"J. R. L., of Pa."—It is not possible to get unbiased information in every patent case. In regard to the Franklin Institute, its officers are above the conduct you attribute to them. Judge Kane's opinion was incorrect, and his decision was wrong, and was justly reversed by Judge Grier. The holes in the stove will answer better for coal than wood, but should answer for wood also. They should be about one fourth of an inch in diameter. It is free property.

"M. F. H., of Ala."—Your discovery is simple and therefore beautiful. As it regards an extensive survey of abstract science, it is not in our power to do so. The few only appreciate the labor and desire the pleasure. The direct application of it, to the arts, is our grand object, and having learned from experience, we have adopted a rule of not publishing such matter.

"J. M. M., of Geo."—We will try at some future time to illustrate the subject you speak of, but at present we cannot, from other engagements. We had thought that the majority of our readers had seen an electro-magnetic engine.

"A. K., of N. Y."—In every case a multiplicity of gearing should be avoided. There is no way of arriving at right conclusions but by experience. If the statement made by you is correct, "regarding a gain of power by an intermediate shaft, without any ultimate change of speed," we cannot see why. Let it be clearly demonstrated, and then it cannot be gainsayed.

"H. H. G., of N. Y."—Your plan of uniting the reciprocating engine and the rotary, is not new. The using of waste steam from the reciprocating engine, transferring it to a rotary, has been used in various ways for some time. Your invention is not new, and we would advise you to waste no more money upon it; it can never operate advantageously, and besides, if it could, it is too well known to be considered of sufficient novelty for a grant of letters patent.

"B. & Bro,, of Md."—The numbers you refer to will be of no use to us, but we are much obliged for the notice. Complete sets of Vols. 1 and 2 are valuable. Nos. 5 and 29 sent,

"J. R. G. of Va."—The turning lathe was forwarded on the 4th, in the bark Memento, via Richmond, to the care of your brothers C. B. & J. G.—bills of lading sent by mail.

"L. F. M., of N. Y."—We have received yours, and will give it due attention.

"M. A. E., or N. Y."—We should like to render you the assistance sought for, but we are not particularly acquainted with any concern in the business. If we should hear of any chance we will inform you.

"E.C. of S., Ct."—Your communication has been received. We have given you credit for 3 copies of the Sci. Am., $2 more will pay for the 5 copies to the close of this Volume.

"W. H. H., of Baltimore."—Your package of documents have been received, and will receive due attention—accept many thanks for your numerous favors—believe, we appreciate your kindness.

"A. P., of Oswego."—The specification of your invention was forwarded to you on the 24th of Sept. Why have you not returned it? "Delays are dangerous," and sometimes fatal.

"J. B., of Va."—It is time your specification was returned to us. Hurry it up.

"I. S., of Mich,"—The drawings and specification of your invention have been executed, and the latter is ready for your signiture.

"R. L,"—The documents have been received and forwarded to the Patent Office.

"L. B. of Ala."—We are awaiting the arrival of your model and on it reception shall proceed at once with your business.

"A. D. B., of Geo.,; A. B., of N. Y.,; R. S. T., Va.,; N. B. R., of N. J., and C. N. B. of Ct."—Your specifications and drawings have been lodged in the Patent Office, and the fees paid.

"A. C. C., and De B., of Mass., J. F. and W. B. R., of Worcester, and P. Van B., of N. Y."—Your specifications were forwarded to you for signatures during the last week,, we hope you will execute them early and return them immediately.

E. R. & A. J. P. of N. Y., D. S. G. of N. H., and G. S. & P. of N. J.—Your applications, will receive attention in their turn and the specifications will be sent your address for signing as soon as prepared.

Money received on account of Patent Office business, since Oct. 3, 1849 :—

D. L. G. of N. H., $30; E. R., of N. Y., $30; A. C., of Vt., $20; S. S. R., Tenn., $25; D. S., of Mass., $10; C. R. S., of Me., $100; N. P. W., of Ct., $25.

Patent Agency.

☞ From our long acquaintance and experience in Patent Office business we have no hesitancy in asserting that we are better able to judge the merit of new inventions, and are better capable of advising upon all subjects pertaining to Patents than any other concern in the United States.

Any business connected with the Patent Office may be done by letter through the Scientific American office with the same facility and certainty as though the inventor applied in person. Our prices too (another important consideration to inventors) are but a out ha f as much as the charges of most agents, as the amount of business which we do, and that in connection with the publication of the Scientific American renders to us superior advantages over all other agents.

Having been often complimented by those who have entrusted their business in our care, we here repeat what very many have said: "The best Patent Agency in the U. States is at the Scientific American office."

All models, drawings or communications sent to the Scientific American office for inspection, are deposited from the eyes of the public until the necessary application for securing the invention has been made.

The best of artists are constantly employed to make drawings from models, and our corps of specification writers are com o ed of gentlemen formerly connected with the Patent Office at Washington as examiners.

All communications should be addressed to
MUNN & CO., Scientific American Office,
POST PAID. (d16) New York.

PARKER'S WATER WHEEL.—The Subscriber offers rights for Sale, by Counties or States, of the Best Water Wheel for Grist Mills, in the United States, which will grind a bushel of corn from three to eight minutes, under a head of water from five to ten feet. It being at the same time simple and durable; any person purchasing a State right will be furnished with a model, and by addressing the Subscriber at S. C., will have all satisfactory information given.
4 3m* EMANUEL PARKER.

ENGINE LATHES.—The Subscribers are now manufacturing, and have constantly on hand, an extensive assortment of the best pat erns of Engine Lathes, which they offer at the following prices:—A Lathe 8 feet long, swing 19 inches, with back and screw gearing, drill chuck, centre and follow rest, $200; ditto, without screw gearing, $150; ditto, without fixtures, $150. For particulars of other sizes, address, (post-paid) SCRANTON & PARSHLEY, New Haven, Ct.
Munn & Co., Scientific American Office, are Agents for the above Lathes. Universal Chucks for sale at $15. 4. 3m.*

NOTICE TO CAPITALISTS.—We are authorized, by a company in the State of Ohio, to call the attention of those interested in the manufacture of flour and woollen goods, to the sale of a large and well established concern in one of the best regions of tha great State. The ill health of the partners compels them to retire from business. The full particulars in relation to the above property, may be had by personal application to the subscribers, or by letter, post-paid.
MUNN & CO.,
3 6* 128 Fulton st., N. Y.

DAGUERRIAN MATERIALS.—JOHN ROACH, Optician, 79 Nassau st., N.Y., is manufacturing American Cameras of imported Flint Glass, which are warranted equal to any. Also, on hand, Voightlander Cameras. Plates, Cases, Chemicals, &c. Galvanic Batteries for gilding and silvering. Elec ro Magnetic Machines for medical purposes. Thermometers wholesale and retail. Object Glasses of various sizes, ground to order and warranted achromatic. 2 10*

LAW'S NEW PLANING MACHINE—For boards and plank, is now in operation in this city—planing, tonguing and grooving at the same time, with rapidity and beauty. It is believed to be superior to any other machine, as it will do the work of two or three rotary machines, and for all Southern, and the majority of Northern lumber, the execution is much better.
Machines, with rights for States, or Counties, can be had by applying to the subscriber, at 216 Pearl street, or at Collyer & Dugand's mill, foot of West Fourteenth street, where the machine is at work.
2 tf H. LAW.

DANIELS' PLANING MACHINES—Manufactured by BALL & RICE, successors to Thomas E. Daniels, Worcester, Mass. All orders promptly attended to, and at such prices as cannot fail to give satisfaction to all who may favor us with their business.. 2 3m*

STEAM ENGINES FOR SALE.—A number of Steam Engines, of one, three and five horse power, will be sold cheap, at No. 2 Bethune st., N. Y. They are all made of the best materials, compact, and well put together, and can be seen running. This affords a good opportunity to those who wish to purchase. Address J. WILEY, as above.
2 3*

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Augusta, Me., Oct. 28, 1848. o28 1y

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For the Scientific American.

More about Cochineal to Dye Silk.

SCARLET AND CRIMSON.

All silk which has its natural gum in it, must be boiled in strong soap to take away its gum, which it will do, showing that more substances than either turpentine or alcohol can dissolve it. Spun silk for dyeing has only to be well wet out in very hot water, it is then wrung up and scutched well out. For scarlet it is bottomed with a good full annato yellow, washed out of it, and wrung up for the spirits. The spirits or mordaunt for silk to be dyed red is the nitro-muriate of tin, yet for a sure and excellent spirits, the simple muriate of tin can answer every purpose.

Kurst, the German, who first brought the secret of using the nitro muriate of tin in dyeing with cochineal, to London, established, or laid the foundation in that city for making the best cochineal colors, at least on silk, in the world, a pre-eminence which she enjoys in some respects even at the present day.

The mordaunt is made up in a tub, a little warm, with about three oz. of white tartar to the pound, and spirits made up in the tub to stand two in the No. 1 hydrometar. The silk is agitated or well handled in this liquor, for about four hours, after which it is taken out and wrung or squeezed, to be entered in the cochineal. But previous to this, (getting the mordaunt,) the silk should have been dyed for scarlet a bright yellow with annato.

The tubs for dyeing silk in, are wide at the mouth and narrow at the bottom, being deep enough to work at without stooping. The best way to prepare the cochineal for dyeing silk, is to boil it for about fifteen minutes in bran water, and then put it in your tub which must be made up at a good heat and with soft water. Three oz. of cochineal boiled in bran water will make a good color, but four oz. may be used in any place where the dyeing of wool is carried on; for the grounds can be used in dyeing scarlet again, and thus no loss will be sustained; but always boil the cochineal, if you have no way to use up the *garglings*. The silk must be handled very quick in the cochineal at the first, but more slow as your liquor gets cold. It is generally handled about four hours and then let down in the liquor, till next morning, and taken out and then slightly washed and dried. This is the way to dye a scarlet, and you might make it a crimson easily by blueing it down in water which contains the slightest portion of lime. First the silk is made a yellow with annato, then it gets the mordaunt, after which it gets the cochineal. This is the most beautiful red on silk. Any person who would like to dye a piece of scarlet silk for themselves, may do so, by using alum for a mordaunt. A certain Dr. Berkenhout once swindled those wise savans, the Lords of the Treasury, in 1715, out of $25,000, for an alleged discovery of dyeing scarlet on cotton and linen. It was a great humbug. Dr. Berkenhout's receipt was transmitted to the London Dyers' Co., by the Lords of the Treasury. It has since been published, and it shows how adroitly the Doctor imposed upon those learned rulers.

Before cochineal became to be used, a small insect found in many parts of Europe, called kermes, was very much used with an alum preparation in dyeing red. It is a color nearly as bright and beautiful as that produced by cochineal, and far more durable. All the old tapestry in the churches were dyed with kermes. It is now out of use.

On wool salmon colors can be dyed with cochineal and quercitron bark, also oranges, only proportion your stuff to the depth of your color. Muriate of tin and tartar are put in along with the drugs.

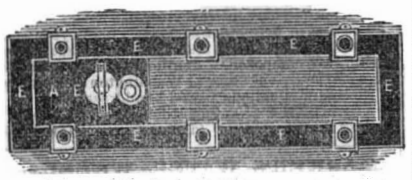
No one can dye to shades, but from long experience. Puce colors and lavenders, also violets may be dyed by a cochineal color first and afterwards bringing them to shade with sulphate of indigo.

COCHINEAL is a most splendid red paint, much used for showy drapery, but it is not so permanent as madder lake. The following is said to be the best receipt for making it—a little superior to the one in the last number of the Scientific American:—4 oz. fine pulverized cochineal, boil it 15 minutes in pure soft water in a tin vessel, and add two drachms of crystals of tin and 2 drachms of crystals of tartar and boil five minutes longer; take it off the fire and let it stand till cold, then pour it off into crystal vessels for two days, when a thick sediment will have fallen to the bottom, pour off the clean liquor and let the sediment be dried, and then it is fit for the painter, but ought to be kept in a tight glass vessel.

Hollow Iron Moulding.

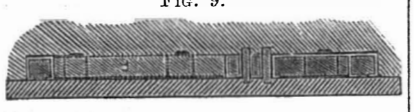
(Concluded from page 24.)

FIG. 8.



After the box is removed, the plate and its overlying core of sand, placed in the recess at the cylinder end of the pattern, are lifted out of their position by arms through the core, and carry with them the pattern of the steam ways. The pattern is not in one piece, the flange is separate, and is lifted off towards the upper side of the core and the remainder of the pattern is drawn out by the under side. The parts of the mould near the pattern core are pierced with small holes by fine wires, rendering the moulding more porous, to facilitate the escape of gas and air. The mould is also watered along the edges. The pattern itself is taken out all at once, by pins secured to it at various places to lift it vertically. This is done by several persons and with great care, lifting the pattern truly and gently with one hand, and striking it gently and constantly with the other. When breaks are made they are repaired with damp sand and the trowel. The moulding is next smoothed on the surface with the trowel and a sprinking of charcoal is smoothed on it, but for very large castings this is omitted, and sometimes finely pulverized sand, in a bag, is dusted over it. The moulding is now ready for the reception of the cores, a very particular operation, both in making and fixing the same.

FIG. 9.



Cores of several forms are necessary for the completion of the moulding. There are, first, the cores for the column sockets, of which there are six; then the cores for the intermediate portions of the sole plate, of which also there are six, there being two on each side between the socket cores, and one at each end; again, two cores for the steam ways, with several other minor cores, for the holding-down-bolt holes in the snugs at the bases of the columns, and for the holes that may be required for the bolting down of pedestals, &c., to the sole. For these, there are simple prints sprigged upon the pattern at the proper places, the impressions of which in the sand serve to hold the cores securely.

Cores must be made not only of the exact size and shape of the vacancies in a casting, whether partial or thorough, which they are intended to form; allowance must also be made on them for the core-prints, when these are necessary. This allowance then is provided in the cores for the column sockets, for which there are prints on the other side of the pattern, fig. 7. These sockets go through the sole, and are square in the body, and round at each end, as may be understood on referring to figs. 5 and 6, and to the annexed fig. 8. which is a plan of the moulding, showing the cores in their places.

Fig. 9 is a longitudinal section of the moulding, taken through the steam ways. F, F, F, is the sand of the floor, in which the moulding is formed, B B, &c., are the cores of the column sockets, seen in the section; C, D, are the cores for the steam ways which, in fig. 9., are seen projecting into the sand, above and below, filling the recesses made for them by the prints. They are formed in boxes, which open in two, for the purpose of extracting them. These, with all the other small cores, are dried upon hot plates, heated by stoves. At A, and E E, &c., the cores are shown, forming the spaces in the moulding intended to be vacant. Near the under side of each, in fig. 9. are the plates indicated by dark lines. which sustain the cores. The whole, however, must be sustained by the bottom of the moulding, leaving a space of the required thickness of the casting. This is effected by placing strips of sheet iron of small lengths there, but with double knees. If the depth of these be just the thickness of the metal then by placing several of them along the bed of the moulding, they support the cores placed over them, keeping the space clear for the metal. These strips or steeples are imbedded in the casting, where they remain The double knee cores at both ends of the moulding in fig. 8, are put together, each in three pieces. In constructing the cores E, E, &c., plain square bodies of sand of the dimension of the interior of the casting, first formed in boxes of the same size including at the same time the iron frames enveloped in the cores. The small cores that are necessary to the oblong openings in the sides of the casting are simply attached in their proper positions to the sides of the main cores E, E, &c. They are formed and fixed on by simply applying upon the larger core, an open box of the form required, into which sand is packed, thus causing it to adhere to the main core; when the box is filled, the sand is squared off by a straight edge. All the other smaller cores having been made and set in their places, the moulding is finally closed, the upper box being replaced, as seen in section I I, fig. 9. This requires to be done cautiously and in a truly vertical direction, as it now receives the upper ends of the cores which project above the moulding, and also bears upon the other cores large and small which do not require any additional security.

When convenient, two or more gates are connected to one central reservoir, all built on the surface of the sand. Gates at considerable distances from one another are usually supplied separately with iron from hand ladels. The other gates that are connected are supplied from crane ladles, which are conveyed by cranes from the cupola to the moulding. The flow-gates, while the metal is being formed, are plugged with clay-balls, to "keep down the air" in the moulding. These plugs are drawn out when the moulding is filled, and the iron flows up. It is thus judged whether the casting is complete. The plugs must not be prematurely drawn, as by the two free egress given to the air, the bottom of the mould is apt to be disturbed by the air confined in the sand.

When the metal is poured, the "feeders" are immediately applied at the flow-gates.—These are rods of iron, which are plunged into the liquid iron, and wrought up and down in it. By this agitative process, the liquidity of the iron about the gates is longer than otherwise maintained. It is therefore enabled to supply itself with additional iron from the flow-gates, for it must be understood that in the cooling down of large bodies of metal, the surface sets, while the interior is liquid; and therefore when the interior farther contracts, it draws in the surface metal toward the centre, and if not fed as above described, the casting assumes a vesicular structure, which weakens it considerably.

To Dye Madder on Wool.

Madder is another stuff used for dyeing red on woollen, silk and cotton. On wool it is dyed by having your goods exceedingly clean and preparing them in alum, in the boiler, for about three-quarters of an hour, at the rate of 4 oz. alum to the pound of wool; the goods are then taken out and well washed. The madder (fine crop) ought to be raised at the rate of one half pound to the pound, and it ought to be steeped in bran the night before using, as a slight fermentation is excited with the bran and madder which extracts all the fine color out of the madder, and being put into the boiler cold and brought up gradually to the spring of the boil, the goods working at the same time, a fine rich color goes on gradually, which is not so readily to be the case in any other process. Never bring the madder above the spring of the boil, or a coarse brownish color will also come out of it, and dull your red. Madder is used most extensively in cotton dyeing, but not much on wool, although it is the most permanent of all reds.

The National Intelligencer states that on Saturday in the Washington Centre Market, Mr. Howlett. of that city, gardener and florist, exhibited a number of pineapples of his own raising, from the crowns of the foreign fruit which were thrown into the street and picked up there about a year ago.

Crossing the Alps in a Balloon.

M. Arban, a French balloonist, has recently made an ærial voyage from Marseilles, in France, across the Alps to Italy. In eight hours he was carried 420 miles.

LITERARY NOTICES.

THE BANKER'S MAGAZINE AND STATISTICAL REGISTER, for October, contains a valuable collection of able articles, interesting to all classes. Among these "The Law of Demand and Notice of Protest," "Government, Finances, Treasury Notes, Revenue and Expenditure of 1846-49," "A Practical Treatise upon English Banking, by an able Financier," "The Condition, Past and Present, of the Ohio Banks," "The Rail Roads of Great Britain—cost of each, cost per mile, dividends, weekly dividends," &c. This Magazine is edited by J. Smith Homans, Esq. Published in Baltimore, at $5 per annum. It has already reached its fourth volume, and is undoubtedly the most comprehensive and able work upon Banking extant. Since the commencement of this and during the publication of the last volume, it presented articles never before published by any other magazine; among them we notice the following: "Chief Justice Taney on Transfers of Stock by Executors;" "Baron Humboldt's Essay on Precious Metals;" "Treatise on Practical Banking," by A. B. Johnson, Esq., of Utica—a very able production; "Opinions of Joshua Bates and other emininent English Bankers, upon the Commercial Crisis and Bank of England;" "Improvements in Bank Note Paper for the Prevention of Forgery," besides many other able articles, which for the want of space we cannot refer to. We can only add that $5 could not be more profitably expended than to pay it for a volume of this work. D. Felt & Co., and Hosford, 50 Wall street, N. Y., are agents.

The October, number of the PHRENOLOGICAL JOURNAL is before us. It presents the mental character of Dr. Joel Shew, of this city—the pioneer of the Water Cure System in this country. It also presents the character of the notorious Maria Monk, who recently died in the Alms House at Blackwell's Island. The contents of this number are unsually sound and instructive and is marked with the usual ability which characterises the efforts of Messrs. Fowlers and Wells.

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